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NOTE TO EDITORS:

CAPSULE HISTORY OF WEATHER SATELLITES

The attached updated Capsule History of Weather Satellites is supplied to you as a ready reference for background material.

(NASA-News-Release-76-146) CAPSULE HISTORY OF WEATHER SATELLITES (National Aeronautics and Space Administration) 8 p

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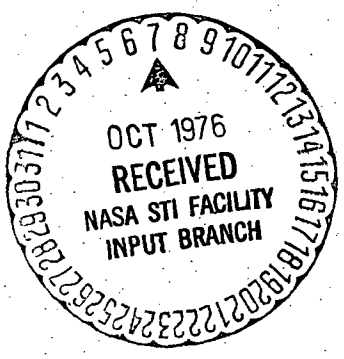

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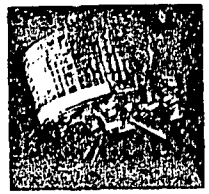

CAPSULE HISTORY OF WEATHER SATELLITES

Name	Launch Vehicle	Date Launched	Remarks
Tiros-1	Thor-Able	April 1, 1960	First global cloud cover picture.
Tiros-2	Thor-Delta	Nov. 23, 1960	Optical and infrared photos of global cloud.
Tiros-3	Thor-Delta	July 12, 1961	Good cloud cover picture, infrared data.
Tiros-4	Thor-Delta	Feb. 8, 1962	Supported Friendship 7 flight.
Tiros-5	Thor-Delta	June 19, 1962	Infrared system inoperative. Good cloud cover pictures.
Tiros-6	Thor-Delta	Sept. 18, 1962	Infrared sensor omitted.
Tiros-7	Thor-Delta	June 19, 1963	Transmitted nearly three years.
Tiros-8	Thor-Delta	Dec. 21, 1963	Carried Automatic Picture Transmission System, allowing real-time readout of local cloud pictures using an inexpensive ground station.
Tiros-9	Thor-Delta	Jan. 22, 1965	First Tiros "cartwheel" configuration for increased coverage of world cloud cover.
Tiros-10	Thor-Delta	July 2, 1965	First U.S. Weather Service-funded spacecraft. Spin-stabilized configuration with two TV cameras, similar to Tiros-6. Placed in near-perfect Sun-synchronous orbit.

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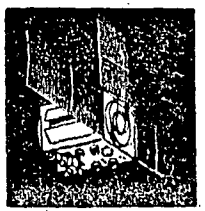
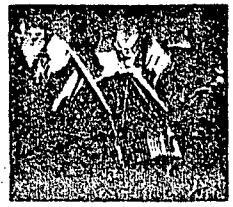
Tiros-M (ITOS-1)	Thor-Delta	Jan. 23, 1970	Second generation operational meteorological satellite, carried TV, APT and scanning radiometers for global cloud data for remote and local readout day and night. Mission was to conduct in-orbit evaluation so that day and night cloud-cover observations could be obtained regularly and dependably in both direct readout and stored modes. First launch of the Delta with six solid strap-ons.



BOX SCORE FOR TIROS: 11 SUCCESSES

ITOS-A (NOAA-1)	Thor-Delta	Dec. 11, 1970	Mission was to provide improved operational infrared and visual observations of Earth cloud cover for use in weather analysis and prediction. NASA reimbursed by NOAA for both spacecraft and launch support. An electrostatic probe experiment was carried piggyback.
ITOS-B	Thor-Delta	Oct. 21, 1971	Mission was to be the same as ITOS-A but failed because of second stage malfunction.
ITOS-D (NOAA-2)	Thor-Delta	Oct. 15, 1972	Operational meteorological satellite based on Tiros research and development experience. Same mission as ITOS-A except that a Vertical Temperature Profile Radiometer (VTPR) for atmospheric temperature sounding and a Very High Resolution Radiometer (VHRR) for detailed imaging and sea surface and cloud top temperature measurements were carried. A small communications relay satellite (AMSAT-OSCAR-C), designed to operate in the radio amateur frequency bands, was carried piggyback.

ITOS-E	Thor-Delta	July 16, 1973	Operational meteorological satellite based on Tiros research and development experience. Same mission as ITOS-D. Failure of second stage caused mission to fail.
ITOS-F (NOAA-3)	Thor-Delta	Nov. 6, 1973	Same mission as ITOS-D.
ITOS-G (NOAA-4)	Delta	Nov. 15, 1974	Same mission as ITOS-D. INTASAT Spanish spacecraft carried piggyback to measure total electron content, ionospheric irregularities and ionospheric scintillations.
ITOS-H (NOAA-5)	Delta	July 29, 1976	Same as ITOS-D.



BOX SCORE FOR ITOS: 5 SUCCESSES
2 FAILURES (Launch Vehicle)

Nimbus-1	Thor-Agena	Aug. 28, 1964	Earth orientation allowed complete global cloud cover pictures each 24 hours. Contained APT for local read-out.
Nimbus-2	Thor-Agena	May 15, 1966	Similar to Earth-oriented Nimbus-1 with additional instruments. Completed more than 2 1/2 years operation with three-axis stabilization.

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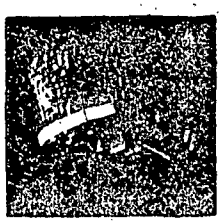
Nimbus-B	Thor-Agena	May 18, 1968	Carried two experiments flown on Nimbus-2 and five new ones plus radioisotopic thermoelectric generator experiment. Launch vehicle destroyed by range safety after two minutes.
Nimbus-3	Thor-Agena	April 14, 1969	Carried experiments identical to those carried by Nimbus-B.
Nimbus-4	Thor-Agena	April 8, 1970	Fifth in a series of seven advanced research and development weather satellites. Seven of nine experiments operational.
Nimbus-5	Delta	Dec. 11, 1972	Stabilized Earth-oriented platform for the testing of advanced systems, sensing and collecting meteorological and geological data.
Nimbus-6	Delta	June 12, 1975	Sun-synchronous polar-orbiting meteorological satellite carrying nine advanced instruments for remote sensing of the atmosphere.



BOX SCORE FOR NIMBUS: 6 SUCCESSES
1 FAILURE (Launch Vehicle)

ESSA-1	Thor-Delta	Feb. 3, 1966	Initiated the Tiros Operational Satellite (TOS) system. Designated Environmental Science Services Administration satellite (ESSA -- which became NOAA, for the National Oceanic and Atmospheric Administration in 1971). Contained a TV sensor system.

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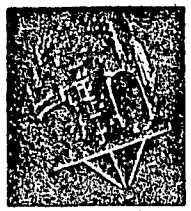
ESSA-2	Thor-Delta	Feb. 28, 1966	Advanced version of cartwheel configuration. Permitted local readout of daylight cloud cover by Automatic Picture Transmission TV system. Polar, Sun-synchronous orbit.
ESSA-3	Thor-Delta	Oct. 2, 1966	First Advanced Vidicon Camera system in Tiros/TOS series; also carried infrared Earth heat balance sensor. Advanced cartwheel design; placed in near-polar Sun-synchronous orbit.
ESSA-4	Thor-Delta	Jan. 26, 1967	Advanced version of cartwheel configuration. Nearly polar Sun-synchronous orbit. Good APT pictures returned.
ESSA-5	Thor-Delta	April 20, 1967	Carried Advanced Vidicon Camera System. In Sun-synchronous orbit with 3 p.m. local equator-crossing time.
ESSA-6	Thor-Delta	Nov. 10, 1967	Carried two TV systems used for APT ground stations. Sun-synchronous orbit.
ESSA-7	Thor-Delta	Aug. 16, 1968	In Sun-synchronous orbit having a local equator crossing each afternoon, permitting daily photos of the entire globe.
ESSA-8	Thor-Delta	Dec. 15, 1968	Carried two APT camera systems to obtain daily cloud photos of the entire globe.
ESSA-9	Thor-Delta	Feb. 26, 1969	Ninth and last mission of TOS series.



BOX SCORE FOR ESSA: 9 SUCCESSES

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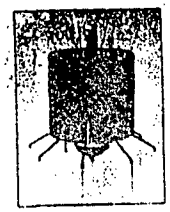
SMS-1	Delta	May 17, 1974	Part of a global network of geo-stationary environmental satellites with the objective of providing re-petitive Earth imaging of the same area in the visible and infrared spectrums.
SMS-2	Delta	Feb. 6, 1975	Supplements SMS-1 in operational NOAA system able to keep continuous watch on fast-moving storms.
SMS-GOES-1	Delta	Oct. 16, 1975	Geostationary Operational Environ-mental Satellite funded by National Oceanic and Atmospheric Administration. Replaces SMS-1 in operational system.

BOX SCORE FOR SMS/GOES: 3 SUCCESSES

CAS (EOLE-A)	Scout	Aug. 16, 1971	Data collection cooperative project of the United States with France in space meteorology, using instrumented balloons and an Earth-orbiting satel-lite to obtain in situ speed and direction of winds (air masses) at vertical altitudes.

Although the Applications Technology Satellites' primary mission was not meteorology, the ATSs returned extensive imagery which helped to delineate weather conditions and charac-teristics. The ATS is therefore included in this listing.

ATS-1	Atlas-Agena	Dec. 6, 1966	Placed into synchronous circular equa-torial orbit over 151 degrees W. longi-tude (near Hawaii). The Spin Scan Cloud Camera returned the first photo covering nearly the entire disc of Earth.



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ATS-2	Atlas-Agena	April 6, 1967	Unsuccessful because of the lack of the Agena's second burn.
ATS-3	Atlas-Agena	Nov. 6, 1967	Nine experiments encompassing communications, meteorology, Earth photography in color, navigation, stabilization and pointing, degradation of surfaces in space and ionosphere.
ATS-4	Atlas-Centaur	Aug. 10, 1968	Centaur failed to achieve second ignition and separation from spacecraft. Experiments were turned on but produced little useful data.
ATS-5	Atlas-Centaur	Aug. 12, 1969	Intended to conduct a carefully instrumented gravity gradient orientation experiment directed toward providing the basic design information for the stabilization and control of long-lived spacecraft in synchronous orbit. Gravity gradient experiment failed, therefore mission was unsuccessful.
ATS-6	Titan III-C	May 30, 1974	Demonstrates technology of broadcasting from satellites to small, low-cost ground stations. Satellite carries out several advanced communications user experiments. Very High Resolution Radiometer produced excellent full-disc cloud pictures but ceased operation after completion of early experimental program.